PATENT SPECIFICATION
DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements relating to Multi-frequency Signal Generating Apparatus

I, GEORGE WALTER DE LA WARR, a British Subject, of "Kingston", Yarnell's Hill, Ferry Hinksey, Berkshire do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following Statement:—

This invention relates to apparatus for generating a complex multi-frequency signal, and is particularly although not exclusively applicable to the diagnosis and/or treatment of disease or other conditions of living creatures, human and otherwise, as well as to the detection of substances such as minerals.

The invention as based on a theory that an orderly process of absorption of energy is contributing to the life cycle of every subject, e.g. each organ and cell group of the human body, which has its own specific requirements of energy for health which can be defined in terms of a pattern or spectrum of frequencies. It is believed that there is an exchange of energy at various levels maintaining the living organism, this exchange involving the absorption of ambient energy of a characteristic frequency pattern, which energy is utilised in the normal processes of cell growth.

Moreover it is believed that there is associated with every disease or other condition of ill-health a characteristic frequency pattern, and that when an organ or cell group of the body is affected with the particular disease or condition it is absorbing energy of the characteristic frequency pattern of the disease, instead of or in addition to the frequency pattern required for its own continued healthy state, and that by subjecting the organ to applied energy having a predetermined corrective frequency pattern the disease condition can be ameliorated.

It is well acecpted that states of mind can have a powerful effect upon the behaviour and condition of the human body, and the present applicant has developed methods by which thought energy can be used for exploring the condition of the human body and for diagnosing and affecting the causative factors that lie behind all conditions of health and of disease. The applicant now believes that the mental energy involved in formulating a thought of a given subject, for example an organ of a healthy body or a disease, contains the same basic and characteristic frequency pattern as that associated with the organ or disease itself, and he has developed various techniques for analysing these frequency patterns into their constituent frequencies, ranging from very low sub-sonic frequencies of less than 1 cycle per second up to radio-frequencies and above, and for employing these results with the aid of various devices for diagnosing disease and other conditions such as fatigue, emotional strain, which are not usually referred to as disease.

These techniques need not be described in detail in the present specification.

It is an object of the present invention to provide an apparatus for generating electronically signals having complex synthetic frequency pattern of predetermined form, which can be utilised in conjunction with the techniques referred to, for example for treatment purposes as by directing at a patient a beam of energy on which a selected frequency pattern produced synthetically by means of the apparatus is superimposed.

Thus according to one aspect of the present invention, apparatus for generating a signal having a complex frequency pattern comprises basically a battery of three or more electronic oscillators, a common mixer and pre-amplifier circuit to which the output signals of all the oscillators are supplied, and a common main

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amplifier to which the output signal of the pre-amplifier circuit is supplied, the output of the main amplifier being utilised for example to drive a sonic transducer, vibrator, solenoid, or some other device adapted to propagate an energy waveform having the combined frequency pattern of the main amplifier output, the output frequency of each of the oscillators being variable independently of the other oscillators throughout a range extending from the region of 5 cycles per second into the radio-frequency range.

The apparatus may also be provided with a tape recorder unit having recording and replay facilities, to whose recording input the output of the pre-amplifier circuit may be supplied so that the mixed frequency pattern can be recorded on tape and subsequently played back either to the main amplifier input, or through a separate amplifier, for example to drive a vibrator for therapeutic purposes.

The apparatus may also incorporate a second pre-amplifier circuit to whose input a separate input signal, for example derived from a patient or other subject through a suitable form of electro-acoustic or electro-mechanical pick-up device, may be supplied, and whose output is connectible either to the main amplifier or to the tape recording unit as required.

The invention may be carried into practice in various ways, but one specific embodiment will now be described by way of example only with reference to the drawings which accompany the provisional specification, in which:

Figure 1 is a circuit diagram of the mixer and pre-amplifier units of a multi-oscillator apparatus, and

Figure 2 is an associated circuit diagram showing the main amplifier and tape recording circuits of the apparatus,

and to the accompanying drawings, in which:

Figure 3 is a diagrammatic view of a microphone device coupled to the second pre-amplifier input of Figure 2 for providing a signal derived from a patient, and

Figure 4 is a diagrammatic view of a parabolic reflector pick-up device coupled to the second pre-amplifier input of Figure 2 for providing a signal derived from the patient.

In the illustrated embodiment of Figures 1 and 2 the apparatus comprises a battery of eight variable-frequency electronic oscillators A1 to A8 whose outputs are connected to a common mixer and pre-amplifier unit B having two output terminals C1 and C2. The output terminal C1 is connected to a main amplifier D through a volume control E, and the other output terminal C2 is connected to a tape recording assembly F comprising two tape decks Fa and Fb together with associated switching facilities.

Each of the eight oscillator units A1 to A8 provides an output whose frequency is variable independently of the others by means of a manual control knob calibrated between 1—5 cycles per second and 150 kilocycles per second, and is also provided with a switch for selecting either a sine wave or a square wave output. The output of each oscillator is connected through an associated switch 10 and series resistor 11 to a common busbar 12 connected to the input of a first pre-amplifying circuit indicated generally at B1. The circuit B1 is a conventional single-stage amplification circuit employing a triode valve 13 having an integrating capacitor 14 connected in series with a resistor 15 between its anode and its grid. The mixed and pre-amplified output from the circuit B1 is supplied via a capacitor 17 and a switch 18 to the first output terminal C1.

Also included in the mixer unit B is a second pre-amplifier circuit B2. This is also a single-stage amplification circuit similar to the circuit B1 but having an additional grid-leak resistor 19 connected between its grid and the earthed cathode circuit. The input terminal 20 of the second pre-amplifier B2 is used to receive an input signal derived from a patient or sample as will be described, and the output of B2 is supplied through a capacitor 21 and switch 22 to the second output terminal C2. The two output terminals C1 and C2 are interconnected by means of a lead 23.

The pre-amplified output from the terminal C1 is connected through the panel-mounted amplifier volume control E to the main amplifier D, which is a conventional unit incorporating negative feed-back and push-pull output, with an output terminal D1.

The output terminal C2 of the pre-amplifier unit B is connected through a recording level volume control 25 to the tape recorder assembly F, whose pair of similar tape decks Fa and Fb each have one recording head F1 or F2 and one replay head F3 or F4, the two decks being fed from a common bias oscillator 26 and recording amplifier-mixer 27, to which they can be selectively connected by means of a three-pole two-way switch 28A. Superimpose and monitoring facilities are provided, controlled by a superimpose volume control 29 and record replay monitor volume control 30, the latter controlling an auxiliary output 31 which may be connected to a separate relay amplifier and loudspeaker (not shown). A single-pole two-way switch 28B either enables a pre-recorded signal pattern to be monitored at play back, or enables it to be mixed at play back from one tape deck with another signal pattern derived from the oscillators A1 to A8, the combined signal being recorded on the other tape deck and/or being monitored by means of the play back head on the latter tape deck. Both tape decks Fa and Fb may be used for recording or play back as selected by the switch 28A.

All the units of the apparatus are fed from

a common voltage-stabilised power supply unit (not shown).

Thus in operation the eight oscillators A1 to A8 are adjusted to provide a pattern of eight pre-selected output frequencies, which combined frequency pattern is pre-amplified in B1 and supplied both to the main amplifier D and to the recording assembly F. The output from the main amplifier is normally used to energise a transducer or energy propagator unit, for example a vibrator, solenoid or loudspeaker, by which wave energy having the combined frequency pattern is emitted and may be beamed or broadcast.

For example, the amplified output may be employed for treatment purposes, being beamed at the patient by means of a sonic beam device comprising a sound transducer and reflector unit, the transducer being connected to the output terminal D of the main amplifier and its sonic output being concentrated into a beam of sound energy of the preset frequency pattern.

Again, the pre-amplified frequency pattern may be recorded on magnetic tape in the recording assembly F and played back subsequently through the replay amplifier and a loudspeaker or through the sonic beam device referred to. Moreover, a more complex frequency pattern may be obtained by superimposing on a tape pre-recorded with a frequency pattern of eight fundamental frequencies, a second signal comprising a pattern of a further eight frequencies obtained after readjusting the settings of the oscillators A1 to A8. The total signal thus recorded on the tape and capable of being replayed, comprises a highly complex pattern of sixteen fundamental frequencies and their harmonics. This doubling-up process may be repeated if a still more complex frequency pattern is required.

Again, the replay output of the tape recorder unit from a tape pre-recorded with a signal comprising eight frequency components may be supplied to the input 20 of the pre-amplifier B2 simultaneously with the supply of the pre-amplifier B1 of a mixed signal of eight different frequency components derived directly from the readjusted oscillators A1 to A8. These two eight-component frequency patterns will thus be superimposed on the input to the main amplifier D.

Various other methods may be employed for beaming the amplified frequency pattern from the main amplifier D or from the tape recorder assembly F to the patient. For example the frequency pattern may be superimposed on a light carrier signal, in the visible, ultra-violet or infra-red range, or a radio carrier signal, by conventional means and directed or broadcast at the patient, the carrier signal being modulated with the required preselected frequency pattern.

The pick-up input 20 leading to the second pre-amplifier circuit B2 is used for feeding into the apparatus a signal derived from the patient or other subject being investigated. Thus for this purpose a highly-sensitive microphone may be used to pick up low-frequency sound waves emanating from the subject. The applicant has found that such sound waves, in the frequency range below 5 cycles per second, are emitted from human beings and can be detected and displayed on an oscilloscope. A suitable microphone H used by the applicant for this purpose is shown in Figure 3 and comprises an elongated hollow cylindrical body H1 open at one end and defining a cavity H2 in which is mounted a diaphragm H3 secured to the stylus arm H4 of a gramophone pickup H5 of the crystal type. The body H1 is mounted on a handle H6. In use the open mouth H7 of the body H1 is applied to the skin of a patient, and the pick-up output is supplied via leads H8 to the input 20 of the second pre-amplifier B1 and hence via the main amplifier D to an oscilloscope. A skilled operator using the techniques developed by the applicant can analyse the characteristic frequency pattern contained in the amplified signal thus supplied, and can thereby diagnose the existence or otherwise of a particular condition or disease. It will be understood that the patient's body can be "scanned" by the operator moving the microphone H over it so that not only the nature but also the seat of a particular complaint can be diagnosed.

Various other methods may be employed for deriving a signal containing a characteristic frequency pattern from a patient or other subject. For example the subject may be scanned by a sonic beam containing a prerecorded frequency pattern played back from the replay output 31, and the reflected energy from the subject collected by means of a reflector pick-up device K shown in Figure 4. The pick-up device K comprises a body K1 housing a parabolic reflector K2 having an aperture K3 at its apex. A conical reflecting bullet K4 mounted by means of a spider in the mouth of the reflector K2 reflects sound waves picked up by the reflector K2 back through the aperture K3 and concentrates it onto a sensitive microphone K5 mounted in a cavity K7 at the rear of the body K1. The electrical output of the microphone K5 is supplied via a lead K8 to the input 20 of the second pre-amplifier B1. The body K1 is mounted on a handle K9. The reflected signal picked up from the subject by the device K and displayed on an oscilloscope or automatic plotting device indicates the frequency pattern of the energy absorbed by the subject, analysis of which can be employed for diagnosis. Again, the subject may be irradiated with infra-red light and the light signal passing through the subject collected by a modified pick-up device employing a light transducer in place of the microphone K5, and fed into the pre-amplifier B2, once again giving an

indication of the absorption frequency pattern of the subject.

The foregoing references to sonic or ultrasonic frequencies are intended to embrace microsounds, that is sounds having an extremely low amplitude and high frequencies such as are sometimes referred to as constituting "thermal noise". The applicant believes that the energy exchange accompanying the creation or materialisation of a physical object, for example a cell or cell group, is accompanied by such microsound which can be detected by resonance effects and amplified and analysed, using the apparatus and methods described above.

Another use to which the present apparatus may be put is the vibration treatment of a patient. A magnetic tape on which an appropriate signal comprising a complex pattern of sonic frequencies has been pre-recorded by means of the multiple oscillators and the pre-amplifiers as described above, is then played back through the main amplifier D to an electromagnetic vibrator connected to the output terminal D1 so as to cause the vibrator to respond with a corresponding vibration signal. For this purpose a connection is made from the replay output 31 to the terminal C1. The vibrator is applied direct to the skin of a patient so as to apply vibrations of the pre-recorded frequency patterns to the living tissues for therapeutic purposes.

The pre-recorded tape, instead of being played back through the main amplifier D, may be inserted in a separate play-back machine having a separate amplifier whose output is supplied to the vibrator for application to the patient.

WHAT I CLAIM IS:—

1. Apparatus for generating a complex multi-frequency signal in the sub-sonic, sonic, ultrasonic and/or radio-frequency ranges, which comprises a battery of three or more electronic oscillators, a common mixer and pre-amplifier circuit to which the output signals of all the oscillators are supplied, and a main amplifier to which the output signal of the pre-amplifier circuit is supplied, the output frequency of each of the oscillators being variable independently of the other oscillators throughout a range extending from the region of 5 cycles per second into the radio-frequency band.

2. Apparatus as claimed in Claim 1, in which the output of the main amplifier is utilised to drive a transducer, vibrator, solenoid, or some other device adapted to propagate an energy wave-form having the combined frequency pattern of the main amplifier output signal.

3. Apparatus as claimed in Claim or Claim 2 including a tape recorder having recording and play-back facilities, the recording input of the tape recorder being connectible to the pre-amplifier circuit output for recording the output signal thereof.

4. Apparatus as claimed in Claim 3 in which the play-back output of the tape recorder is connectible to the input of the main amplifier.

5. Apparatus as claimed in Claim 3 or Claim 4 in which the play-back output of the tape recorder is provided with a separate output terminal for connection to a further and separate amplifier.

6. Apparatus as claimed in any one of Claims 3 to 5 including a second pre-amplifier circuit having an input to which a separate input signal can be supplied, the output of the second pre-amplifier being connectible alternatively to the main amplifier input or to the recording input of the tape recording unit.

7. Apparatus as claimed in Claim 6 including microphone means connected to the input of the second pre-amplifier circuit and arranged to detect low-frequency sound energy emanating from a source to which the microphone means may be applied.

8. Apparatus as claimed in Claim 7 in which the microphone means comprises a hollow vessel open at one end and having a flexible diaphragm extending across its interior near its other end, and a gramophone pick-up cartridge mounted in this vessel with its stylus arm secured to the central region of the diaphragm, whereby sound energy entering the vessel vibrates the diaphragm and produces a corresponding electrical output signal from the pick-up cartridge.

9. Apparatus as claimed in Claim 6 including an optical or sonic pick-up device arranged to detect light energy or sonic energy emitted by or reflected from a source, the pick-up device comprising a concave reflector arranged to receive the energy to be detected and to concentrate it onto a transducer, e.g. a microphone or photocell whose corresponding electrical output is supplied to the input of the second pre-amplifier circuit.

10. Apparatus as claimed in any one of Claims 3 to 9 including a portable vibrator unit energised by the amplified output of the tape recorder play-back unit via the main amplifier or via a separate amplifier, the vibrator being designed to be applied locally to the body of a patient so as to vibrate or stimulate the adjacent tissues or cell group of the patient.

11. Apparatus as claimed in any one of the preceding claims in which some or all of the electronic oscillators are capable of producing either a sine wave output or a square wave output.

12. Apparatus as claimed in any one of Claims 1 to 11 in which the range of output frequency of each oscillator extends from 1

cycle per second or lower, up to the radio-frequency band.

13. Apparatus for use in the treatment of disease, which comprises a battery of three or more electronic oscillators, a common mixer and preamplifier circuit to which the outputs of all the oscillators are supplied, and a main amplifier to whose input the output of the preamplifier is supplied, and a vibrator or solenoid energised by the output of the main amplifier and adapted to be applied locally to a patient and to propagate vibrational energy having a frequency pattern corresponding to that of the main amplifier output, the output frequency of each oscillator being variable independently of the other oscillators throughout a range extending from 5 cycles per second into the radio-frequency band.

14. Apparatus for use in the treatment of disease and other conditions of living creatures, which comprises a battery of three or more electronic oscillators, a common mixer and pre-amplifier circuit to which the outputs of all the oscillators are supplied, a tape recorder having recording and playback facilities respectively connectable to the output and input of the pre-amplifier circuit, and a main amplifier to which the output of the pre-amplifier circuit is supplied, and means for connecting the output of the main amplifier to a sonic transducer, vibrator, or some other device adapted to propagate vibrational, sound or light energy in wave form having the combined frequency pattern of the main amplifier output, the output frequency of each oscillator being variable independently of the other oscillators throughout a range extending from the region of 5 cycles per second into the radio-frequency band.

15. Apparatus for use in the treatment of disease and other conditions of living creatures, which comprises a battery of electronic oscillators of independently-variable output frequency, a common mixer and pre-amplifier circuit to which the outputs of all the oscillators are supplied, and a main amplifier to whose input the output of the pre-amplifier circuit is supplied, there being at least five of the oscillators the output frequency of each of which is adjustable independently of the other oscillators throughout a range extending from 1 cycle per second, up to the radio-frequency band, and a propagator of sound, light or vibrational energy energised by the output of the main amplifier and capable of producing an energy output in wave form whose frequency pattern corresponds to that of the output of the main amplifier.

16. Apparatus as claimed in Claim 15 including a tape recorder having recording and playback facilities respectively connectable to the output and input of the pre-amplifier circuit for recording and playback purposes.

17. A signal-generating apparatus as specifically described herein with reference to Figures 1 and 2 with or without one of the additional devices described with reference to Figures 3 and 4 of the accompanying drawings.

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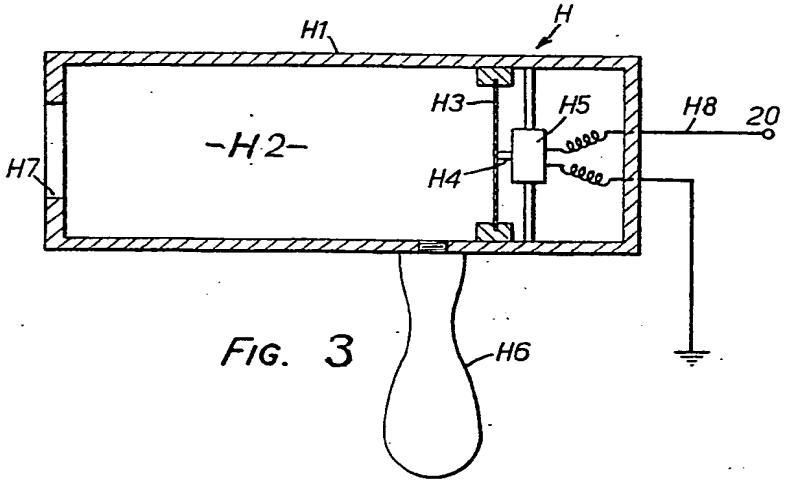

FIG. 3

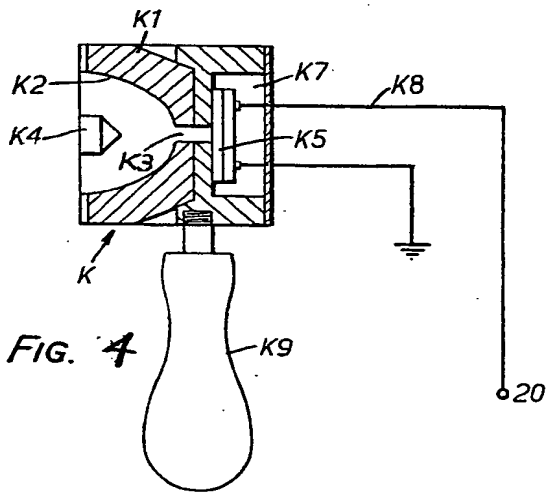

FIG. 4

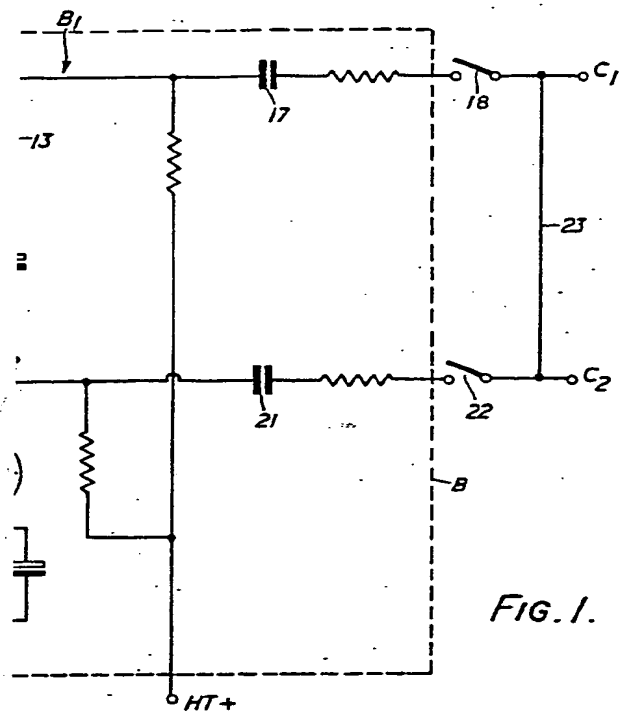

FIG. 1.

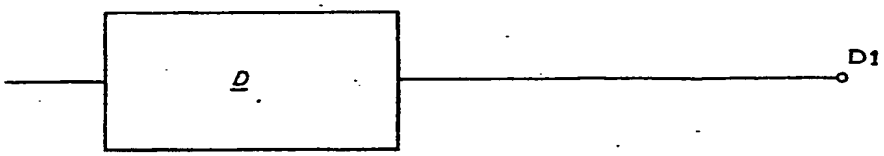

FIG. 2.